Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~A purified~~The α-isomaltosylglucosaccharide- forming enzyme of claim 54, which is ~~forms a saccharide, having a glucose polymerization degree of at least three and having both the α-1,6-glucosidic linkage as a linkage at the non-reducing end and the α-1,4-glucosidic linkage other than the linkage at the non-reducing end, by catalyzing the α-glucosyl transfer from a saccharide, having a glucose polymerization degree of at least two and having the α-glucosidic linkage as a linkage at the non-reducing end; said enzyme being~~ obtained from a microorganism of the genus *Bacillus* selected from the group consisting of *Bacillus globisporus* C9, FERM BP-7143, and mutants thereof and having the following physicochemical properties:

a. Molecular weight about 140,000 + 20,000, Daltons on SDS-PAGE;

b. Isoelectric point (pI) about 5.2 + 0.5 on isoelectrophoresis using ampholine;

c. Optimum temperature

(i). About 40°C when incubated at a pH of 6.0 for 60 minutes;

(ii). About 45°C when incubated at a pH of 6.0 for 60 minutes in the presence of 1 mM Ca^{2+};

d. Optimum pH about 6.0 to 6.5 when incubated at 35°C for 60 minutes;

e. Thermal stability

(i). Stable up to a temperature of about 35°C when incubated at a pH of 6.0 for 60 minutes;

(ii). Stable up to a temperature of about 40°C when incubated at a pH of 6.0 for 60 minutes in the presence of 1 mM Ca^{2+}; and

f. pH stability stable at pHs of about 4.5 to 9.0 when incubated at 4°C for 24 hours.

2. (Cancelled)

3. (Currently Amended) The ~~purified~~ α-isomaltosylglucosaccharide-forming enzyme of claim ~~1, 48, 52, or 53~~54 wherein said saccharide, having a glucose polymerization degree of at least two and having the α-1, 4 glucosidic linkage as a linkage at the non-reducing end, is one or more members selected from the group consisting of maltooligosaccharides, maltodextrins, amylodextrins, amyloses, amylopectins, soluble starches, liquefied starches, and glycogens.

Claims 4 - 47. (Cancelled)

48. (Currently Amended) ~~A purified~~The α-isomaltosylglucosaccharide-forming enzyme of claim 54 which is ~~forms a saccharide having a glucose polymerization degree of at least three and having both an α-1,6-glucosidic linkage as a linkage at the non-reducing end and an α-1,4-glucosidic linkage other than the linkage at the non-reducing end, by catalyzing α-glucosyl transfer from a saccharide having a glucose polymerization degree of at least two and having an α-1,4-glucosidic linkage as a linkage at the non-reducing end; said enzyme being obtainable~~obtained from a microorganism of the genus *Arthrobacter* selected from the group consisting of

Arthrobacter globiformis A19, FERM BP-7590, and mutants thereof and having the following physicochemical properties:

a. Molecular weight about 94,000 + 20,000 Daltons on SDS-PAGE;

b. Isoelectric point (pI) about 4.3 + 0.5 on isoelectrophoresis using ampholine;

c. Optimum temperature

(i). About 60°C when incubated at a pH of 8.4 for 60 minutes;

(ii). About 65°C when incubated at a pH of 8.4 for 60 minutes in the presence of 1 mM Ca^{2+};

d. Optimum pH about 8.4 when incubated at 35°C for 60 minutes;

e. Thermal stability

(i). Stable up to a temperature of about 55°C when incubated at a pH of 8.0 for 60 minutes;

(ii). Stable up to a temperature of about 60°C when incubated at a pH of 8.0 for 60 minutes in the presence of 1 mM Ca^{2+}; and

f. pH stability stable at pHs of about 5.0 to 9.0 when incubated at 4°C for 24 hours.

Claims 49 - 51. (Cancelled)

52. (Currently Amended) ~~A purified~~The α-isomaltosyl-glucosaccharide-forming enzyme of claim 54 which is ~~forms a saccharide having a degree of glucose polymerization of at least three and having both the α-1,6-glucosidic linkage as a linkage at the non-reducing end and the α-1,4-glucosidic linkage other than the linkage at the non-reducing end, by catalyzing the α-glucosyl transfer from a saccharide having a degree of~~

~~glucose polymerization of at least two and having the α-glucosidic linkage as a linkage at the non-reducing end; said enzyme being~~ obtained from a microorganism of the genus *Bacillus* selected from the group consisting of *Bacillus globisporus* C11, FERM BP-7144 and mutants thereof, said enzyme having the following physicochemical properties:

a. Molecular weight
About 137,000 + 20,000 Daltons on SDS-PAGE;

b. Isoelectric point (pI)
About 5.2 + 0.5 on isoelectrophoresis using ampholine;

c. Optimum temperature
(i) about 45°C when incubated at a pH of 6.0 for 60 minutes;
(ii) about 50°C when incubated at a pH of 6.0 for 60 minutes in the presence of 1 mM Ca^{2+};

d. Optimum pH about 6.0 when incubated at 35°C for 60 minutes;

e. Thermal stability
(i) Stable up to a temperature of about 40°C when incubated at a pH of 6.0 for 60 minutes;
(ii) Stable up to a temperature of about 45°C when incubated at a pH of 6.0 for 60 minutes in the presence of 1mM Ca^{2+};

f. pH stability
Stable at pHs of about 5.0 to about 10 when incubated at 4°C for 24 hours.

53. (Currently Amended) ~~A purified~~ The α-isomaltosyl-glucosaccharide-forming enzyme of claim 54 which is ~~forms a saccharide having a degree of glucose polymerization of~~

~~at least three and having both the α-1,6 glucosidic linkage as a linkage at the non-reducing end and the α-1,4 glucosidic linkage other than the linkage at the non-reducing end by catalyzing α-glucosyl-transfer from a saccharide having a degree of glucose polymerization of at least two and having the α-glucosidic linkage as a linkage at the non-reducing end; said enzyme being~~ obtained from a microorganism of the genus *Bacillus* selected from the group consisting of *Bacillus globisporus* N75, FERM BP-7591 and mutants thereof, said enzyme having the following physicochemical properties:

a. Molecular weight

About 136,000 + 20,000 Daltons on SDS-PAGE;

b. Isoelectric point (pI)

About 7.3 + 0.5 on isoelectrophoresis using ampholine;

c. Optimum temperature

(i) About 50°C when incubated at a pH of 6.0 for 60 minutes;

(ii) About 55°C when incubated at a pH of 6.0 for 60 minutes in the presence of 1 mM Ca^{2+};

d. Optimum pH

e. about 6.0 when incubated at 35°C for 60 minutes;

~~e.~~f. Thermal stability

(i) Stable up to a temperature of about 45°C when incubated at a pH of 6.0 for 60 minutes;

(ii) Stable up to a temperature of about 50°C when incubated at a pH of 6.0 for 60 minutes in the presence of 1mM Ca^{2+};

f. pH stability

Stable at pHs of about 5.0 to about 9.0 when incubated at 4°C for 24 hours.

54. (New) A purified α-isomaltosylglucosaccharide-forming enzyme which forms a saccharide having a glucose polymerization degree of at least three and having both the α-1,6 glucosidic linkage as a linkage at the non-reducing end and the α-1,4 glucosidic linkage other than the linkage at the non-reducing end, by catalyzing the α-glucosyl-transfer from a saccharide having a glucose polymerization degree of at least two and having the α-glucosidic linkage at the non-reducing end; which enzyme has a partial amino acid sequence of SEQ ID NO:1, SEQ ID NO:11 or SEQ ID NO:18; said enzyme being incapable of forming dextran, said enzyme being inhibited by EDTA, and said enzyme stabilized and/or activated by Ca^{2+} and Mn^{2+}.